

## VAUGHAN CASE STUDY

### Aberdeen, WA WWTP Influent Pump

Case Study Date: October 2017

#### CONTACT INFORMATION:

City of Aberdeen WWTP  
603 East Heron Street  
Aberdeen, WA 98520

#### CUSTOMER:

City of Aberdeen, WA WWTP; Main Influent Pump



#### THE PREVIOUS EQUIPMENT:

The Aberdeen WWTP main influent pumps were old and worn out “non-clog” type pumps, highly susceptible to plugging and both electrically and hydraulically inefficient.

#### THE PROBLEM:

The old influent pumps needed to be unclogged a minimum of once daily. (2 mechanics for 1 hour = 2 man hours). The City of Aberdeen has not calculated the costs of low electrical and hydraulic efficiency.

In terms of costs saved, two man hours per day at approximately \$34/hr plus benefits; assume \$50/hour including overhead costs. Annual cost: 365 days/year x 2 man hours/day x \$50/man hour = \$36,500/year in maintenance costs.

#### THE SOLUTION:

The City of Aberdeen purchased one 60 HP, 1180-RPM model PE8N10CS-133 Vaughan chopper pump in October, 2012, 5 years ago as of the date of this case study, to see how this pump would work alongside the older influent pumps. The rated performance was 3,300 US GPM at 37 ft TDH.

Aberdeen Public Works Director shared: “We are happy with the performance of the Vaughan Chopper pump. It has eliminated the need for daily unclogging of pumps, which eliminates the safety risks involved with cleaning a clogged pump, and maintenance has been reduced to standard preventative maintenance as opposed to repairs. Also, we seem to have a lot fewer rags throughout our system, and fewer rags reduces wear on downstream equipment and reduces the “clean-up time” when we take facilities down for maintenance.”

The Vaughan chopper pump is so effective at eliminating clogging problems and the associated costs compared to the older pumps that it is used as the primary influent pump and the older pumps are rarely used, left in standby mode.

#### THE RESULTS:

The Vaughan PE8N influent pump was installed in late 2012. The City of Aberdeen receives annual rainfall in the range of 70-100 inches per year, averaging 83 inches/year; Aberdeen’s WWTP averages daily flows of approximately 3.5 MGD with high flows slightly exceeding 16 MGD. Routine plugging problems in the influent station have been eliminated. *The list price of this pump in 2012 was \$29,060, and with the elimination of annual maintenance costs of \$36,500/year, the payback for this pump was about 0.80 years or 9.6 months.*

